Chapter 15. Contesting the role of self-talk in sport psychology in views of mindfulness, flow, and mind wandering

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Abstract

The purpose of this chapter was to review self-talk with respect to three contrasting phenomena: mindfulness, flow, and mind wandering. On important lesson learned in the first part of this chapter was that mindfulness may help to detect the nature of organic self-talk and let go of non-functional inner speech. With regards to flow, the discussion focused on the degree to which the signature qualities of flow are in conflict with the deliberate, rational, and cognitively demanding nature of strategic and goal-directed self-talk. In the last section, emphasis was placed on the similarities between the uncontrolled nature of unintentional mind wandering and spontaneous self-talk and the controlled and effortful nature of intentional mind wandering and goal-directed self-talk. Overall, it was concluded that this perspective-taking exercise in this chapter can be acknowledged as being paradigmatic, insofar as it has led to a deeper understanding of self-talk, mindfulness, flow and mind wandering.

Introduction

Self-talk researchers have a deep interest in the concept of self-talk and, consequently, may tend to overvalue the relevance of athletes' inner dialogue for sport performance. This self-talk book contains contributions from many self-talk researchers and could convince the reader that self-talk is the ultimate key to successful sport performance. However, it is important to note that many researchers outside of this area have had different perspectives on this.

For one disagreeing view on the relevance of self-talk, contemplate the following example. For some time now, self-talk researchers have used instructional self-talk cues in strategic self-talk interventions to facilitate learning and enhance performance (Cutton & Landin, 2007; Latinjak, Torregrossa, & Renom, 2010). Intrigued by the potential utility of self-talk cues, these researchers set out to prove that the repetition of technical cue words (e.g., shoulders low) would be key to facilitating skill acquisition and elevated performance in sports. Yet, in the meantime, other researchers have had a very different opinion about the role of instructional self-talk cues in learning and performance. Some researchers studied the negative effects of internal foci of attention (e.g., Wulf, 2013), which are implicitly fostered when using most instructional cue words (Bell & Hardy, 2009). Indeed, it was only through the joint consideration of both lines of research that led us to recognise that instructional cue words are under circumstances best if they direct the focus of attention on external aspects of technique execution (e.g., racquet head up; Bell & Hardy, 2009; Latinjak et al., 2010).

To enable scientific advancements, it is important to think critically about existing knowledge and consider alternative viewpoints on an area. Hence, the purpose of this chapter is to review self-talk with respect to three contrasting phenomena: mindfulness, flow, and mind wandering. While each of these share common features with self-talk, mainly regarding cognitive control and thought content, they also present substantial discrepancies, particularly concerning their idea of what constitutes an optimal performance state. To further our understanding of self-talk, one researcher in each of the respective areas attempts to interpret, from the limited evidence available, how self-talk could reconcile with these phenomena. Furthermore, a series of applied recommendations on the use of self-talk in relation to mindfulness, flow, and mind wandering are also advanced.

A mindful perspective on self-talk: Daniel Birrer

The human mind is full of internal events such as thoughts, feelings and sensations. Sometimes these internal experiences are present in the form of ruminations, dysfunctional thinking, and erratic inner speech. Occasionally a person is fully aware of these experiential contents that pop up across the consciousness as temporary events. Yet, most of the time, individuals are unaware of the exact content of these internal experiences. Human beings are fused together with these internal experiences and held fast by the ropes of their own first-person phenomenological experience. Additionally, there is a large individual and situational difference in the characteristics and frequencies of these different inner experiences (Heavey & Hurlburt, 2008; Seli, Cheyne, Xu, Purdon, & Smilek, 2015).

In fact, there exist various psychological concepts that represent the multitude of possible categories of perceived inner events. Heavey and Hurlburt (2008) name inner speech, inner seeing, unsymbolised thinking, feeling, sensory awareness, inner hearing and just ‘doing’ as the most frequent phenomena of inner experience. Self-talk as “an act of syntactically recognizable communication in which the sender of the message is also the receiver” (Van Raalte, Vincent, & Brewer, 2016, p. 140) is one specific form of these internal events.

Having said this, it has also to be conceded that there is no mutual agreement on what categories of inner experience are distinguishable, how they are named, and how these various concepts are related (for a reflection on what distinguishes self-talk from other inner experiences see, Chapter 2). Especially in sports, various opinions and diverse lines of research on the nature of self-talk appear to exist. Self-talk is sometimes viewed as a form of goal-directed or undirected thinking (Latinjak, Hatzigeorgiadis, & Zourbanos, 2017), involving different processing mechanisms (automatic, intuitive, fast, effortless and contextualised vs. decontextualised, involving reasoning, slow, requiring more conscious effort and demanding of working memory - Van Raalte et al., 2016) or having a variety of other functions (Hardy & Oliver, 2014).

Amazingly enough, although in some self-talk literature the connection between self-talk and thoughts is made (e.g., Hardy, 2006), the view that self-talk strongly relies upon consciousness and its experience is not explicitly made. Consciousness as a scientific term is viewed as “the subjective awareness of momentary experience interpreted in the context of personal memory and present state” (Roy John, 2003, p. 244). Seeing self-talk as a specific process of the human consciousness with a past, present, and future time

perspective might be useful in illuminating some contradictory findings in the self-talk discourse.

At the same time, as in the tradition of cognitive therapy, one central element in the self-talk literature appears to be that a key feature of self-talk is the centrality of cognitive causes with regard to emotion and behaviour. Emotions and behaviours are seen as products of thoughts when they co-occur with a behaviour of interest. To change behaviour, an individual has to change his organic self-talk - or more precisely, the content of their inner dialogue. Nevertheless, sometimes athletes seem to experience difficulty in controlling their cognitive processes by employing traditional psychological skills training methods like self-talk. Some promising alternative perspectives to enhance behavioural functioning are mindfulness and acceptance-based concepts (Birrer, Röthlin, & Morgan, 2012).

Mindfulness and acceptance are core features of the so-called third-wave of cognitive-behavioural therapies (Hayes, 2004). Third-wave therapies are characterised by the renunciation, or cautious use, of content-oriented cognitive interventions. The concept of mindfulness hinges on focusing on one's own awareness of the present moment with an accepting, non-judgemental and non-reacting attitude (Kabat-Zinn, 2003), which is traditionally fostered by mindfulness practice through formal or informal exercise.

Both mindfulness and self-talk are associated with a particular state of consciousness. The experiential contents of the consciousness as well as the self-talk itself are likely to be caused by the interaction between exogenous factors (i.e., environmental stimuli) and endogenous factors (i.e., internal bodily inputs or unsymbolised thinking) (Manuello, Vercelli, Nani, Costa, & Cauda, 2016; Van Raalte, et al., 2016). The dimension of contents and sources of both self-talk and conscious experience can therefore be divided into external awareness (i.e., what we perceive through the senses) and internal awareness (i.e., thoughts which are independent of specific external stimuli; Manuello et al., 2016). Internal and external awareness are crucial for consciousness and the sense of self.

The sense of self or conscious presence, which is understood as the subjective sense of reality of the world and of the self within the world, emerges when predicted interoceptive signals (i.e., expected information from the muscles, articulations, skin and organs) and real input signals (i.e., actual information coming from the muscles, articulations, skin, and organs) match (Seth, Suzuki, & Critchley, 2012). All these signals are conjointly processed in different brain areas and produce in their sum and quality the sense of self. This subjectively experienced conscious state or sense of self is thought to be formed by a global workspace with its characteristic feature of the conjointly distributed availability of information due to long-range neuronal projections (Manuello et al., 2016). Within this global workspace other important areas in the generation of behaviour, like speech and motor areas, can be connected to the associative areas that deal with the contents of experience.

Areas involved in the generation of the conscious experience are also reported to be involved in mindfulness meditation (Manuello et al., 2016). Mindfulness practice is thought to increase awareness and recognition of bodily sensations, as well as to improve interoceptive observational skills. In contrast to cognitive behavioural or self-talk concepts, mindfulness and acceptance-based concepts are focused more on the

person's relationship to thoughts and emotions than on their content. Three different processes are proposed to be relevant for enhanced psychological functioning through mindfulness and acceptance (Birrer & Röthlin, 2017): (a) purposeful present-moment awareness (e.g., continually returning attention to external or internal present-moment experience), (b) metacognitive awareness (e.g., mindful self-focused attention of internal processes, thoughts, emotions, bodily sensations, images and desires as observable events of the brain), and (c) acceptance. Regarding metacognitive awareness, this process is sometimes referred to as defusion or decentring, the conscious observation of whatever flickers across the consciousness as a temporary experience in the mind without identifying with them or believing that thoughts and emotions are accurate reflections of reality or the self. As for the third process, (c), it refers to acceptance of what is in the consciousness and what may arise or come into consciousness in an open, non-judgemental and non-avoiding way, regardless of whether it is considered pleasant or not.

Another main feature of third wave therapies is the assumption that thoughts, together with organic self-talk as a specific form of thought, do not necessarily represent reality. Instead, they are seen as events in the mind that can or cannot tell us how things are, and we can choose to pay attention to them or not. The concept of mindfulness stems from Buddhist tradition, where internal experiences of thoughts and emotions are regarded as a sixth sense (the mind sense; Kang & Whittingham, 2010). Thoughts and emotions can be observed equally well as bodily sensations, which is compatible with the conception of interoceptive attention and its neuronal correlates (Manuello et al., 2016). Mindfulness and acceptance practice allow for thoughts and emotions to simply be recognised in the stream of consciousness without attempting to evaluate their validity or being caught up in them. In mindfulness and acceptance approaches, thoughts are just thoughts; they are not regarded as reality itself. Similarly, moods come and go; individuals do not have to identify with them or own them.

Within a mindfulness and acceptance approach there is no need to alter or reduce emotions or thoughts, no matter if they are goal-directed thoughts, or involuntary and unintentional undirected thoughts (mind-wandering, stimulus-independent thoughts and spontaneous thoughts) or anticipatory, retrospective, present related or contextual related self-talk, with a positive, negative or neutral valence. Findings suggest that increases in the self-reported ability to step back psychologically from thoughts and view them as mental processes rather than absolute truths (i.e., meta-cognitive awareness or cognitive defusion) is a mediator in treatments of cognitive therapy as well as acceptance commitment therapy (Forman et al., 2012). It is plausible that present moment awareness is helpful in the development of meta-cognitive awareness, because it helps to detect outer and inner experience. Acceptance, although as a mediator of change only present in mindfulness and acceptance approaches (Forman et al., 2012), may help to view thoughts and emotions as acceptable as they are, with no need to modify them. Mindfulness and acceptance approaches effectively encourage engagement in behavioural activity regardless of distressing inner speech or emotions. It allows an individual to notice the thoughts, emotions, feelings, and sensations and choose what to hold on to and what to let pass.

Additionally, acceptance commitment therapy sees thoughts as tools (Hayes, 2004). As tools in a chest, they need not be thrown away if the situation calls for another tool to repair something. Just as a carpenter uses a hammer to drive in a nail, although they

were holding a screwdriver in their hands the moment before, an individual can use a different thought to follow their personal values, although another thought may have previously appeared in their mind. In that sense, self-talk is neither good nor bad; it is functional or non-functional depending on the situational context, and there are good reasons why a specific inner voice has spoken up in a certain situation. In this respect, it is helpful that a person is aware of their inner dialogue and accepts its content. In doing so, they can choose to either react to this stimulus, and thereby cause possible distress from their efforts to change or eliminate this inner event (e.g., the experience of pain-elicited self-talk resulting from physical exhaustion), or they can engage in goal-directed behaviour (e.g., keeping to an exercise regimen with the same focus and intensity).

Mindfulness helps a person to realise their inner voice and to disengage from autopilot mode. Instead of reacting, a person is able to respond to the events in life (i.e., inner or outer experience). Mindfulness empowers them to engage in goal-directed behaviour in spite of negative thoughts and feelings. A mindfulness and acceptance approach considers thoughts and self-talk as an essential part of human consciousness. Nevertheless, these inner experiences are not regarded as causative factors; instead cognitive, affective, and behavioural phenomena are all seen as interdependent and mutually determined. Furthermore, experiences are formed by the words and ideas people attach to (Langer, 1992). Calling a competition ‘tough’ can mean joy to one person and resignation or defeat to another. Mindfulness will help one to embrace the sweaty, messy and sometimes difficult aspects of being an athlete. It helps to create space between a person and their inner speech. People are not at the mercy of their thoughts and emotions. From a mindfulness and acceptance approach, efforts to change one’s thoughts, feelings and other internal states are often ineffective and consume resources. The ability to step back psychologically from one’s own thoughts and view them as mental processes rather than absolute truths decreases the amount of dysfunctional thinking and changes the person’s relationship to them. Mindfulness, and particularly present-moment awareness and meta-cognitive awareness, helps to detect the nature of organic self-talk and let go of non-functional inner speech. Private speech or organic self-talk is regarded as a construction of the human brain and not reality (acceptance). Nevertheless, it is relevant for human behaviour. The mindful way is not letting go of self-talk, but letting go of the belief in the absolute truth of it.

Flow experience and self-talk: Patricia C. Jackman

Athletes who achieve excellent performance often acknowledge the importance of their psychological state (Jackson & Kimiecik, 2008). *Optimal experience* is an umbrella term used to capture positive psychological states that create feelings of happiness and culminate in self-fulfilling experiences, which are a consequence of exerting effort (Jackson & Wrigley, 2004). The most-studied framework for understanding optimal experience in sport is flow (Csikszentmihalyi, 1975), which is defined as an intrinsically rewarding psychological state that occurs when individuals are challenged beyond normal levels but believe they possess the ability to meet the demands of the task (Csikszentmihalyi, 2002). Flow states are characterised by a sense of harmony between body and mind, distinct perceptions of control and total immersion in a specific activity, with such episodes often leaving people feeling as though something special has occurred (Jackson & Csikszentmihalyi, 1999).

Most common understanding of flow centres on Csikszentmihalyi's (2002) flow framework, which conceptualises this experience as an amalgam of nine dimensions[1]: (i) challenge-skills balance; (ii) action-awareness merging; (iii) clear goals; (iv) unambiguous feedback; (v) concentration on the task at hand; (vi) sense of control; (vii) loss of self-consciousness; (viii) transformation of time; and (ix) autotelic experience. Flow has been associated with peak performance (Jackson & Roberts, 1992) and a range of positive psychological consequences, including increased athlete engagement (Hodge, Lonsdale, & Jackson, 2009), future motivation (Schüler & Brunner, 2009), self-concept (Jackson, Thomas, Marsh, & Smethurst, 2001), and wellbeing (Haworth, 1993). Given that these outcomes are desirable and pertinent for athletes of all ages, levels, and activities, understanding how athletes can experience flow more often is beneficial for athletes, coaches, researchers, and sport psychology practitioners.

Occurrence of Flow

Despite over four decades of research, flow states are still considered to be rare and elusive (e.g., Swann, Piggott, Schweickle, & Vella, 2018). Since the inception of scholarly work on flow in sport in the early 1990s (e.g., Jackson, 1992), researchers have primarily sought to advance understanding of the occurrence of flow through qualitative interviews (e.g., Jackson, 1995). While research has identified a myriad of factors associated with flow (see Swann, Keegan, Piggott, & Crust, 2012 for a review), this does not guarantee that they are involved in the causal mechanisms underpinning flow states, as it is conceivable that flow could be experienced even in the absence of one or more of these factors (Swann, Piggott, Crust, Keegan, & Hemmings, 2015). Indeed, despite calls to understand the causal mechanisms underlying flow in early work in sport (Kimiecik & Stein, 1992), the majority of research has focused on association, with the absence of an explanatory theory for flow persisting as an issue in the field (Swann et al., 2018).

To move towards developing a causal explanation for flow, Swann et al. (2017a) conducted interviews soon after recent performances to explore the contexts and processes underlying the occurrence of flow in sport. Flow was reported in contexts that involved novelty, uncertainty, exploration and experimentation. During such contexts, flow occurred through a gradual increase in confidence, which was triggered by the occurrence of positive events and provision of positive feedback. This feedback prompted an increase in confidence and encouraged athletes to challenge themselves and set 'open' goals (e.g., "see how well I can do"), which facilitated the transition into flow. While this research has advanced understanding of the occurrence of flow and provided new insights into the potential importance of goal types for inducing flow (Swann et al., 2017a), further investigation of the process underlying the occurrence of flow and the effect of open goals on subjective experience in sport is required.

Self-talk and the Flow Experience

The sport-specific model of self-talk in sport (Van Raalte et al., 2016), which integrates key elements of dual-process theories (Evans & Stanovich, 2013), proposes that self-

[1] Although generally accepted as the conceptualisation of flow across many domains, some issues have been raised with this conceptualisation of flow in sport (e.g., Jackman, Fitzpatrick, Lane, & Swann, 2019; Swann et al., 2018).

talk can be classified into two categories: (i) System 1 self-talk, which is rapid, intuitive and automatic; and (ii) System 2 self-talk, which requires cognitive effort, is reliant on working memory, and is intentional, slow and analytical. System 1 self-talk corresponds to spontaneous self-talk, whereas System 2 self-talk refers to goal-directed self-talk (see Chapters 1-2). Given that flow is characterised by automatic and spontaneous skill execution, absence of analytical, critical thoughts, and a perceived ability to direct complete attention towards the task more effortlessly compared to normal (e.g., Jackman, Crust, & Swann, 2017; Jackson & Csikszentmihalyi, 1999), these signature qualities appear to be in conflict with the deliberate, rational, and cognitively demanding nature of goal-directed self-talk. Indeed, although there is limited empirical evidence concerning the nature of self-talk during flow states in sport, athletes have reported a perceptual "switching off" or silencing of their internal dialogue during flow (Swann et al., 2017a). Therefore, it is possible that strategic, pre-planned self-talk statements could be unhelpful if used unnecessarily or inappropriately during flow[2].

Applied Recommendations

Due to the limited evidence base that athletes, researchers, coaches and sport psychology practitioners can draw upon, any applied recommendations regarding the use of self-talk to induce and prolong flow states can only be tentatively advanced at this point and require further empirical investigation. Qualitative studies have reported that positive self-talk can facilitate flow (Jackson, 1992), while negative self-talk is considered to be inhibitory (Jackson, 1995). Based on the steps involved in the process of flow occurrence (Swann et al., 2017a), expressing affirmative self-statements after positive events during performances could help to build confidence. In turn, this boost in confidence could encourage athletes to challenge themselves and, combined with the setting of open goals, facilitate the transition into flow. Upon entering flow, athletes have reported the adoption of dissociative psychological skills, such as positive distractions, to manage and prolong flow states (Swann et al., 2017a, 2015). Thus, it appears that focusing attention away from the task could help athletes to sustain flow states and reduce the potential for excessive cognitive processing, over-analysis, and critical thoughts, which are purported to disrupt flow (e.g., Chavez, 2008; Jackson, 1995). Although speculative, employing self-talk that seeks to direct attention away from performance outcomes, and therefore reduces the likelihood of analytical and critical thought, could help athletes to prolong flow states. However, it should be noted that further investigation of self-talk and flow states adopting progressive research methods (cf. Swann et al., 2018), such as event-focused interviews (e.g., Swann et al., 2019, 2017a, 2017b), is required to enable the development of more robust, evidence-based recommendations for athletes, coaches, and practitioners.

Mind wandering and self-talk: Alexander T. Latinjak

Mind wandering is a cognitive process that would include any thought that is unrelated to the ongoing task or activity, thus unrelated to the thought-eliciting situation (Klinger, 2009). With regards to everyday life, mind wandering is considered to occupy between

[2] Athletes have reported using self-talk to sustain "clutch" states (Jackman, Crust, & Swann, in press; Swann et al., 2017a). Clutch states are considered to underlie clutch performance, which is defined as enhanced performance in pressure situations (Otten, 2009), and include several characteristics that are distinct from flow, including: effortful, complete, and deliberate focus; intense effort; and conscious awareness of the situation (Swann et al., 2017b, 2019).

30% and 50% of waking time (e.g., Levinson, Smallwood, & Davidson, 2012). Examples of mind wandering are as conventional as thinking about the past game while sitting in school, rehearsing one's argument while driving to work, or thinking about vacations while running in the park.

In terms of research, mind wandering is a thriving topic (Szpunar, Moulton, & Schacter, 2013) with 1116 entries for a search on the topic *mind wandering* in the Web of Science (date: October 2019), including 875 articles and 72 reviews. Yet, when searching for the topic *mind wandering* in combination with the topic *sport*, the results merely display two articles (Latinjak, 2018a, 2018b). Studies in the sport context have, however, considered the wandering mind using different terms, such as dissociative attentional styles (e.g., Hutchinson & Karageorghis, 2013) and irrelevant thoughts (Englert, Bertrams, Furley, & Oudejans, 2015). Additional popular concepts used instead of mind wandering in the general psychology literature are daydreaming (Klinger, 2013) and fantasizing (Oettingen, 2014). However, similar to the case of mind wandering, neither daydreaming nor fantasizing have been studied in the sport domain (for the sole fantasizing-related study see Tay, Valshtein, Krott, & Oettingen, 2019).

With regards to mind wandering experiences, research has shown that mind wandering occurs in competition, primarily before the game, while winning, during breaks when the coach is talking, and when bored. In training, mind wandering happens when the coach is talking, in physically demanding tasks, and with boredom or fatigue (Latinjak, 2018a). In terms of the consequences of mind wandering, the is evidence that control over mind wandering is essential for its effects. The more athletes perceive control over their mind wandering, the more likely it is to function as a helpful distraction, source of creativity, and means to emotion-regulation. On the contrary, if athletes detect problems controlling mind wandering, it is more likely to be a detrimental distraction in sport training and competition.

Despite these interesting insights, the aforementioned study (Latinjak, 2018a) ought to be interpreted with caution since it has not sufficiently taken into consideration that not all mind wandering is created equal (Seli, Carriere, & Smilek, 2015). For example, it should be obvious that casual mind wandering during a team briefing is not the same as conscious attempts to think about a sunny beach to distract from pain. In general psychology, many researchers have identified this difference as crucial (Christoff, 2012; Seli et al., 2015; Smallwood, 2013). Accordingly, mind wandering can be intentional, for instance, when athletes bid their minds to wander and become distracted from an unpleasant concurrent experience, such as pain or boredom; or unintentional, when athletes find their minds have passively drifted away from the present to a distant place somewhere in the present or future (Seli, Wammes, Risko, & Smilek, 2015).

The distinction between intentional and unintentional mind wandering will be equally pertinent to sport than other life contexts. Whereas unintentional mind wandering might lead to detrimental distraction (Englert et al., 2015), intentional mind wandering could lead to the dissociative attentional style that has proven to be helpful in tasks requiring endurance and pain management (Stanley, Pargman, & Tenenbaum, 2007). Unintentional mind wandering in school settings, has shown to be mediated by lower levels of motivation and to negatively impact performance (Hollis & Was, 2016). Likewise, in sports, unintentional mind wandering could be elicited in tasks perceived by athletes to be intrinsically less appealing. In fact, the previously mentioned

exploratory study found that mind wandering occurs frequently while the coach talks, during breaks, and while experiencing boredom (Latinjak, 2018a). Yet, it is noteworthy that unintentional mind wandering could also be positively related to creativity. Along these lines, mind wandering and creativity share the use of the default network, a complex of brain regions (Beaty, Benedek, Kaufman, & Silvia, 2015). Unintentional mind wandering might support creativity by facilitating new associations between previously unconnected ideas (Williams et al., 2018).

Generally, intentional mind wandering is seen as beneficial for the mind wanderer. Overall, researchers consider that voluntary shifts of attention would seem to involve higher orders of control in information processing or be motivationally determined and benign because of their controlled nature (Seli, Risko, Smilek, & Schacter, 2016). Specifically, intentional mind wandering can have immediate positive effects, such as pleasing reverie, insight, or new synthesis of material. In addition, intentional mind wandering can also have delayed benefits that come from reinterpreting past scenarios in light of new information, rehearsing upcoming scenarios or projecting desired performances and outcomes (McMillan, Kaufman, & Singer, 2013).

Given the growing interest on mind wandering in the psychology research literature, and preliminary findings that point to the important role mind wandering may play in sports, it is timely to promote the study of mind wandering in sport. Along these lines, self-talk, a highly developed research area in sport psychology, could be an interesting lens through which to investigate this concept. Mind wandering can easily be related to inner dialogues, when their content is unrelated to the ongoing task, and, thus, be linked to a significant part of the sport psychology literature.

Mind wandering and self-talk

As can be inferred from the previous section, there are similarities between the uncontrolled nature of unintentional mind wandering and spontaneous self-talk, and the controlled and effortful nature of intentional mind wandering and goal-directed self-talk. Some forms of spontaneous, stimuli-oriented cognition, including spontaneous self-talk, may be closely related to unintentional mind wandering as they are relatively free of deliberate or goal-directed constraints (Christoff, Irving, Fox, Spreng, & Andrews-Hanna, 2016). When looking for unintentional mind wandering in the spontaneous self-talk literature, we quickly encounter the idea of task-unrelated self-talk.

In the self-talk literature, task-irrelevant self-talk has been measured already in the first questionnaires, such as the Thought Occurrence Questionnaire for Sport (Hatzigeorgiadis & Biddle, 2000) or the Automatic Self-talk Questionnaire for Sport (Zourbanos, Hatzigeorgiadis, Chroni, Theodorakis, & Papaiannou, 2009). Statistically, these scales have consistently contributed to a larger second-order factor called negative self-talk (Latinjak, Viladrich, Alcaraz, y Torregrosa, 2016). Thereupon, task-irrelevant self-talk has often been equalled to other types of spontaneous self-talk such as performance worries or thoughts of disengagement.

The assumption that unintentional mind wandering is similar to other negative types of spontaneous self-talk is, nevertheless, likely to be erroneous on two accounts. First, research has shown that spontaneous thinking and mind wandering have partly different

neurological activation patterns (c.f., Christoff, 2012; Raichle et al., 2001). Second, the structure of mind wandering content is different to the content of spontaneous self-talk, even though this difference has not been adequately reflected in self-talk questionnaires. In our study on thought processes in sport (Latinjak, 2018b), we have captured instances of both spontaneous thought and mind wandering. While spontaneous thoughts were relatively brief and simple constructions (e.g., "This was crap; you're not good at this game"), extracts of mind wandering were much longer with different intertwined ideas:

> *"I'm lucky not to work today. Just imagine being on my feet for 8 hours – Yes, but Sunday I won't be able to see the other game because I'll have to work – Well, better Sunday than Saturday, when I play – I hope I'll play well, because since my injury I haven't had much luck."*

Overall, these are solid grounds to belief that undirected self-talk that is unrelated to the task, and hence constitutes some sort of unintentional mind wandering, is qualitatively distinct from spontaneous self-talk that reflect task-related psychological processes (see also, Chapter 2). In future research, it could be interesting to inquire into the neurological processes associated with spontaneous and goal-directed self-talk, to ascertain to what degree they correspond to the neurological underpinnings of unintentional and intentional mind wandering. Furthermore, considering that spontaneous self-talk reflects task-related psychological processes (e.g., emotions, see Chapter 5), it would be important to explore what psychological processes, if any, unintentional mind wandering reflects.

With regards to goal-directed self-talk and intentional mind wandering, the research focus would lie on the self-regulatory potential of both psychological skills. The studies on dissociative attentional style (e.g., Brick, MacIntyre, & Campbell, 2014) hint that intentional mind wandering could be used as a coping strategy. Hence, could goal-directed self-talk serve as a meta-skill for intentional mind wandering? It is plausible that the conscious verbalization would reinforce the potential of intentional mind wandering for effective self-regulation.

Moreover, applied research could explore instances in which athletes use goal-directed self-talk to force the mind to wander, away from current thoughts and contextual stimuli. If this self-regulatory strategy were to be effective to enhance performance, another relevant question would be if athletes could be taught to use goal-directed self-talk to start and control mind wandering to control, thereby, relevant psychological processes. In this regard, our findings have already hinted that the more athletes are able to control the initiation and content of mind wandering, the better the effects of mind wandering for emotion-regulation and facilitative distraction (Latinjak, 2018a).

Other intriguing research questions about intentional mind wandering and, thus, *task-unrelated goal-directed self-talk*, refer to when and why athletes force their minds to abandon their immediate reality to focus on sports. Hence, this set of questions regards sport-related goal-directed self-talk that happens in not-sport environments. For instance, thinking about sport while watching TV, could be beneficial if it leads to motor learning or finding innovative solutions in sport. Yet, it might also be detrimental if is a symptom of obsessive passion or excessively strong athletic identity.

Altogether, the line of sport self-talk research could stimulate the study of mind wandering in sport. Mainly, because some task-unrelated spontaneous self-talk and

goal-directed self-talk also reflect instances of unintentional and intentional mind wandering, respectively. Nonetheless, it should be kept in mind that unintentional and intentional mind wandering go beyond the bounds of self-talk, as they include preverbal sorts of thinking linked, for example, to imagery.

Conclusions

The aim of this chapter was to adopt a critical perspective towards the role of self-talk in sport psychology by connecting self-talk with three popular phenomena: mindfulness, flow, and mind wandering. The contents in this chapter provide an alternative perspective regarding the degree to which self-talk can be seen as a central concept in sport psychology. For instance, considering the tenets of the mindfulness-acceptance approach, we are reminded that thoughts, together with spontaneous self-talk as a specific form of thought, do not necessarily represent reality. From the perspective of mind wandering, self-talk, as it is conceptualised in sport psychology, is restricted by a task-focus approach. Mind wandering considers thoughts and self-talk that have a far-reaching impact on sport performance, but do not fit within a task-related mindset. Furthermore, flow is an optimal experience in sport that is characterised by effortless attention (Swann et al., 2017a). Thus, it is argued that the intentional nature of goal-directed self-talk could be adversative to the experience of flow and that athletes might not benefit from such effortful self-regulation attempts when trying to prolong flow states.

With regards to applied practice, we raised the question as to whether interventions should look beyond self-talk *content* and focus on conditions in which self-talk is actually helpful. For example, in a mindfulness-acceptance approach, there is no need to alter emotions, thoughts, or spontaneous self-talk. In contrast, self-talk interventions consider the alteration of self-talk crucial for eliciting performance improvements. This is especially true for strategic self-talk interventions, where the repetition of cue words is an ostensible feature. Alternatively, in reflexive self-talk interventions (see, Chapter 7), self-talk use is not compulsory, although it is promoted. Yet, it is also noteworthy that reflexive self-talk interventions share similarities with the mindfulness-acceptance approach, especially with regards to the centrality of awareness. Arguably, goal-directed self-talk is used by athletes to raise awareness and even foster acceptance of psychological challenges. Of course, both awareness and acceptance are central to a mindfulness-acceptance mindset. Thus, goal-directed self-talk could be the means to support mindfulness-acceptance processes, as long as such goal-directed self-talk does not follow the urge to alter current states. In that sense, goal-directed self-talk can be regarded as a specific form of consciousness, which is purposefully used to pursue a goal as e.g. being in the present moment.

Furthermore, it should be acknowledged that goal-directed self-talk seems to be in conflict with the characteristics of flow[2]. Therefore, in reflexive self-talk interventions, athletes should explore moments in which self-talk could be detrimental to the sustainment of flow states. Similarly, it is important to acknowledge that, from a theoretical point of view, strategic self-talk interventions, as they are described in the literature, could impede flow states. Based on empirical evidence, it is tentatively suggested that using self-talk cues to draw attention away from the task could help to prolong flow states.

In light of the potential benefits of unintentional mind wandering, especially when it comes to creativity, there is a need to discuss when goal-directed self-talk should be used to support attention control skills with athletes. In a similar vein, in reflexive self-talk interventions, the procedures should include questions on the conditions in which self-talk could be helpful if it supports intentional mind wandering, both in sport and outside the sport context.

Altogether, it is advisable to avoid being misled by a book on self-talk. Such specific books place a sport psychology concept into the spotlight, and could present it as being more crucial than it is in the broader literature. While self-talk is important, it is just another piece in the knowledge map of sport and exercise psychology (Chapter 1). In this chapter we compared self-talk with three somewhat-related states: mindfulness, flow, and mind wandering. We have come to consider this perspective-taking exercise as paradigmatic, insofar as it has led to a deeper understanding of these specialities. By embracing the deep complexity of sport psychology and accepting contradicting points of view as inherent to psychological science, this has allowed us to explore new and exciting ideas regarding self-talk research and practice.

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